

What is claimed is:

1. An apparatus comprising:
a substrate having at least a first surface; and
a plurality of cells disposed in a predetermined feature pattern on said
5 at least a first surface,
means for changing the pressure of at least a first fluid disposed within
said plurality of cells in order to cause a selected liquid to change the degree
of penetration of said feature pattern.
- 10 2. The apparatus of claim 1 wherein said plurality of cells each have at
least a first dimension less than 1 millimeter.
3. The apparatus of claim 1 wherein said plurality of cells each have at
least a first dimension less than 1 micron.
4. The apparatus of claim 1 wherein said means for changing the
pressure of at least a first fluid comprises means for changing the temperature
15 of said at least a first fluid.
5. The apparatus of claim 1 wherein said means for changing the
pressure of at least a first fluid comprises means for injecting and removing
varying amounts of said fluid into and out of said cells, respectively.
- 20 6. The apparatus of claim 1 wherein the means for changing the
pressure of at least a first fluid comprises a liquid disposed on said feature
pattern in a way such that, upon the pressure of said liquid changing, the
pressure of said fluid changes.
- 25 7. A method for controlling friction on at least a first surface of a
substrate, said surface comprising a plurality of cells disposed in a
predetermined feature pattern, said method comprising:
varying the pressure of at least a first fluid in at least one cell in said
plurality of cells in a way such that a liquid in contact with said cells will
variably enter and exit the cells.

8. The method of claim 7 wherein said pressure is varied by varying the temperature of the fluid within said at least one cell.

9. The method of claim 7 wherein each cell in said plurality of cells has at least a first dimension less than 1 millimeter.

5 10. The method of claim 7 wherein each cell in said plurality of cells has at least a first dimension less than 1 micron.

11. The method of claim 7 wherein said pressure is varied in response to a variation of the pressure of a liquid disposed on said feature pattern.